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13. ABSTRACT (Maximum 200 words) The program for the conference covers a broad range of topics, including polyions and block ionomers in solution, self-assembly and pattern recognition, electro-phoresis and polyelectrolyte gels, inorganic mesophases and nano-composites, ionomer theory and block ionomer surfaces, ionomer phase behavior and micro-structures, dendrimers and graft copolymers. Four lectures were set aside to cover the recent advances in fuel cells with emphasis on PEM fuel cells. New results were presented on polyelectrolyte and ionomer experiments which provided further development on theory related to charged polymer structure, conformation and self-assembly behavior. The advances in creating inorganic nano-structured materials look particularly interesting and promising. The sessions on fuel cells were well received. <div style="text-align: right;"> </div>				
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FINAL REPORT

Gordon Conference on Ion-Containing Polymers

The Gordon Conference on "Ion-Containing Polymers" was held July 9-14, 1995 at Colby-Sawyer College (South) in New London, New Hampshire. The conference had 100 participants with more than one quarter of the participants coming from foreign countries. There was a healthy mixture of scientists from universities (~60%), national laboratories (~10%) and private industries (~30%), including graduate students/post-doctorates (~1/4), young scientists and established scientists.

The program for the conference covers a broad range of topics, including polyions and block ionomers in solution, self-assembly and pattern recognition, electrophoresis and polyelectrolyte gels, inorganic mesophases and nano-composites, ionomer theory and block ionomer surfaces, ionomer phase behavior and microstructures, dendrimers and graft copolymers. Four lectures were set aside to cover the recent advances in fuel cells with emphasis on PEM fuel cells. There were twenty speakers and nine discussion leaders in order to provide ample time for discussions and active participation by the conferees. Two separate poster sessions with a total of 45 posters were held, one each on Tuesday and Wednesday evenings, after the evening lecture. Many conferees liked the quality and information content of the posters.

New results were presented on polyelectrolyte and ionomer experiments which provided further development on theory related to charged polymer structure, conformation, and self-assembly behavior. The advances in creating inorganic nano-structured materials look particularly interesting and promising. The sessions on fuel cells were well received.

Many conferees expressed their satisfaction and personally congratulated the Chairman on the success of this conference.

The support by the U.S. Army Research Office has been gratefully acknowledged. I certify that funds provided by the Army Research Office under Grant DAAH04-95-1-0410 were expended in accordance with the provisions of the grant and that required scientific reports have been delivered to the Army Research Office.

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PROGRAM

Day, Date	Speaker & Title	Discussion Leader
MONDAY 7/10/95	A.M. Polyions and Block Ionomers in Solution	Dr. Eric Amis NIST
	Professor Manfred Schmidt, Universitat Bayreuth "Interparticle Interaction and Molecular Conformation of Polyions in Solution"	
	Professor Chi Wu, The Chinese University of Hong Kong "Light-Scattering Study of Complexation Behavior of Block Ionomers"	
	Self-Assembly & Pattern Recognition	
	Professor M. Muthukumar, University of Massachusetts "Self-Assembly and Pattern Recognition of Polyelectrolytes"	
	Posters for Poster Session I in position on Monday afternoon (by 2:30 pm).	
	P.M. Electrophoresis and Polyelectrolyte Gel	Prof. Robert K. Prud'homme Princeton University
	Professor Gilbert Weill, CNRS et Universite L. Pasteur "The Effective Charge of Polyelectrolytes in Electrophoresis"	
	Professor Dietrich Woermann, University of Koln "Transport Properties and Structure of a Polyelectrolyte Gel"	
TUESDAY 7/11/95	A.M. Inorganic Mesophases and Nanocomposites	Dr. Raymond Farinato Cytec Industries
	Professor Kenneth Mauritz, University of Southern Mississippi "Ionomer-Based Organic and Inorganic Nanocomposites"	
	Professor Bradley F. Chmelka, University of California, Santa Barbara "Ionic Interactions in Surfactant-Inorganic Mesophases"	
	Ionomer Theory	
	Professor Alexei Khokhlov, Moscow State University "Statistical Theory of Ionomers: Superstrong Segregation and Disc-Like Multiplets"	
	P.M. Block Ionomer Surfaces	Prof. Richard Register Princeton University
	Professor Miriam Rafailovich, State University of New York "Ionomeric Polymers at Interfaces"	
	Poster Session I (with a very short oral presentation) Dr. Charles Martin	

WEDNESDAY
7/12/95

**A.M. Ionomer Phase Behavior
and Microstructures**

Dr. Claudine Williams
CNRS - Lure

Professor Robert Weiss, University of Connecticut
"Phase Behavior of Ionomer/Polymer Blends"

Dr. Dan Q. Wu, DuPont
"Synchrotron SAXS Studies of NAFION Morphology"

Dr. Jaan Noolandi, Xerox Research Centre of Canada
"Ordered Microphases in Solid State Ionomers"

(Remove Posters for Session I immediately after lunch)
Posters for Poster Session II in position (by 2:30 pm)

P.M. Dendrimers

Prof. Masanori Hara
Rutgers University

Dr. Donald A. Tomalia, Michigan Molecular Institute
"An Overview of Starburst® Dendrimer Technology and Applications"

Poster Session II

Dr. Charles Martin

THURSDAY
7/13/95

A.M. Graft Copolymers and Fuel Cells I

Prof. Stuart Cooper
University of Delaware

Dr. Dennis G. Peiffer, Exxon Research & Engineering Company
"Synthesis and Behavior of Graft Copolymers formed via Conventional
Methods as well as through Ionic Interactions"

Dr. Keith R. Plowman, Dow USA
"PEM Fuel Cell Systems: The Effect of Membrane Properties on Performance"

Professor Robert F. Savinell, Case Western Reserve University
"Direct Methanol PEM Fuel Cells"

**P.M. Architecture and Morphological
Diversity**

Prof. William M. Risen, Jr.
Brown University

Professor Adi Eisenberg, McGill University
"Architectural and Morphological Diversity in Ion-Containing Polymers"

Michael A. Mabe, Editorial Director, Materials Science
Elsevier Publishing Company, Oxford
"The Scientific Journal, Its Past, Present and Future"

FRIDAY
7/14/95

A.M. Fuel Cells II

Dr. Charles Martin

Professor Howard L. Yeager, University of Calgary
"Conductivity, Percolation Threshold, and Dielectric Properties of Hydrocarbon and
Perfluorinated Ionomers"

Professor Darryl D. DesMarteau, Clemson University
"Synthesis and Properties of Novel Perfluorinated Ionomers Containing Sulfonimide Acid
Functions"

Conference Registration List

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10-Jul-85

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